

AMENDMENTS TO THE CLAIMS:

Please amend Claims 10, 12, and 13 as follows:

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1. (Original) A test method for measuring the low spatial uniformity of a DMD, comprising the steps of:
 - building a reference surface correction image;
 - capturing a test image;
 - correcting said test image to remove DMD mirror tilt angle non-uniformities from said test image;
 - further correcting said test image to remove system illumination and optics non-uniformities from said test image;
 - multiplying said test image by said correction reference image to produce a low spatial uniformity result image; and
 - extracting low frequency non-uniformity defect data from the result image.
 2. (Original) The test method of Claim 1 wherein said reference surface correction image is formed by means of a light mapping process, comprising the steps of:
 - stepping a small 50x50 pixel region of DMD mirrors having constant reflectivity from point to point in a grid pattern over the field of view of the test DMD;
 - recording the intensity data at each of said points in said grid pattern; and
 - performing a bi-directional interpolation between said grid points in two dimensions over image to provide said reference surface correction image.
 3. (Original) The test method of Claim 1 wherein test image is prepared by means of:
 - capturing said test image in smaller frames;
 - removing high spatial non-uniformity components using a 21x21 pixel smoothing filter;
 - stitching said frames together to form a full size test image; and
 - taking average of said frames to remove said stitched image boundary discontinuities.
 4. (Original) The test method of Claim 1 wherein said result image is obtained for:
 - +20° illumination relative to 0° DMD mirror tilt angle; and

-20° illumination relative to 0° DMD mirror tilt angle.

5. (Original) The test method of Claim 4 wherein said result image isolates and extracts:
- high spatial frequency defects;
 - stitched frame boundary discontinuities;
 - DMD mirror tilt angle non-uniformities; and
 - low frequency illumination source and optics non-uniformities.
6. (Original) The test method of Claim 4 wherein:
- said result image is flattened;
 - said result image consists essentially of data representing the DMD mirror reflectivity non-uniformities.
7. (Original) A test method for measuring the low spatial uniformity of a DMD, comprising the steps of:
- capturing a test image;
 - developing a correction reference surface image which conforms to the average surface of said test image;
 - developing a gain factor correction image;
 - multiplying said test image by said gain factor correction image to provide a flattened low spatial uniformity result image; and
 - extracting the low frequency non-uniformity defect data from said result image.
8. (Original) The test method of Claim 7 wherein test image is prepared by means of:
- capturing said test image in smaller frames;
 - removing high spatial non-uniformity components using a 21x21 pixel smoothing filter;
 - stitching said frames together to form a full size test image; and
 - taking average of said frames to remove said stitched image boundary discontinuities.
9. (Original) The test method of Claim 7 wherein said result image is obtained for:
- +20° illumination relative to 0° DMD mirror tilt angle; and
 - 20° illumination relative to 0° DMD mirror tilt angle.

10. (Currently amended) A test method for measuring the low spatial uniformity of a DMD, comprising the steps of ~~The test method of Claim 7:~~

capturing a test image;

developing a correction reference surface image which conforms to the average surface of said test image; wherein said correction reference surface image is formed by means of:

performing a 3x3 pixel lowpass filtering of said test image;

sub-sampling of said filtered image to provide a representative image

having fewer rows and columns;

using said representative image data to generate a set of 2nd order equations; and

using said equations to generate a reference surface having only 2nd order variations

developing a gain factor correction image;

multiplying said test image by said gain factor correction image to provide a flattened low spatial uniformity result image; and

extracting the low frequency non-uniformity defect data from said result image.

11. (Original) The test method of Claim 10 wherein said gain factor correction image is formed from said reference surface data; such that
- a flatten image plane results when said reference surface data is multiplied by said gain factor correction image data.
12. (Currently amended) The test method of Claim 10 ~~11~~ wherein said result image isolates and extracts:
- high spatial frequency defects;
- stitched frame boundary discontinuities;
- DMD mirror tilt angle non-uniformities; and
- low frequency illumination source and optics non-uniformities.
13. (Currently amended) The test method of Claim 10 ~~12~~ wherein:
- said result image is flattened;

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conc'd

said result image consists essentially of data representing the DMD mirror
reflectivity non-uniformities.
